

## UIC - RIV Freight Car Numbering Scheme

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The *Union Internationale des Chemins de fer* (UIC) was founded in 1922 with the aim of creating uniform conditions for the establishment and operation of railways. The UIC's scope has expanded to include preparing standards, regulations, and recommendations to facilitate international traffic.

The UIC developed regulations governing freight vehicles in the *Regolamento Internazionale Veicoli* (RIV). A similar agreement, *Regolamento Internazionale Carrozze* (RIC), covers the interchange of passenger cars. Both RIV and RIC prescribe a numbering scheme with a unique 12-digit number for each rail vehicle. The number contains some "intelligence" in that it encodes specific information about the car and includes a computer check digit that helps ensure the number is correctly read and recorded.

Implementation of the UIC numbering scheme occurred in the 1960s, roughly corresponding to the beginning of the period modelers refer to as "Epoch IV." It's probably impossible to pin down a specific date since the remarking of literally millions of rail vehicles could not have happened overnight. Furthermore, the UIC numbering scheme is a 'living system' that has responded to changes, both political and technological, in the years since its implementation.

What follows, therefore, is a reasonable attempt at describing the system at two points in time: prior to 1 January 1980, and at the end of the 20th Century. In a future article, I will describe the RIC passenger car numbering system and give a few modeler's notes.

### Digits 1-2

The first two digits indicate the interchange characteristics of the vehicle. By the end of 1979, the schema for these two digits was:

		Internal Use	International Use			
			Fixed Gauge	Variable Gauge		Other
				1435mm	1435mm-1524mm	
Jointly Operated Fleet (Pool, Interfrigo)	Standard Per-diem Rate		01	02, 03	04, 05	06
	Special Per-diem Rate	10	11	12, 13	14, 15	16
RIV Traffic	Standard Per-diem Rate	20	21	22, 23	24, 25	26
	Special Per-diem Rate	30	31	32, 33	34, 35	36

Currently, the schema is:

<b>Number</b>	<b>Use</b>	<b>Axles/Trucks</b>	<b>Ownership</b>
01, 02	RIV-EUROP	2-3axles	Railway-owned
03, 04	RIV-EUROP	2-3axles	Privately-owned
05, 06	RIV-EUROP	2-3axles	Per-diem
11, 12	RIV-EUROP	Truck-equipped	Railway-owned
13, 14	RIV-EUROP	Truck-equipped	Privately-owned
15, 16	RIV-EUROP	Truck-equipped	Per-diem
21, 22	RIV	2-3 axles	Railway-owned
23, 24	RIV	2-3 axles	Privately-owned
25, 26	RIV	2-3 axles	Per-diem
31, 32	RIV	Truck-equipped	Railway-owned
33, 34	RIV	Truck-equipped	Privately-owned
35, 36	RIV	Truck-equipped	Per-diem
40	Internal Service	2-3 axles	Service
41, 42	Internal Service	2-3 axles	Railway-owned
43, 44	Internal Service	2-3 axles	Private
45, 46	Internal Service	2-3 axles	Per-diem
80	Internal Service	Truck-equipped	Service
81-82	Internal Service	Truck-equipped	Railway-owned
83-84	Internal Service	Truck-equipped	Private
85-86	Internal Service	Truck-equipped	Per-diem

Oddly, under the current schema all reference to the gauge changing capabilities of the individual car seem to be lost!

### Digits 3-4

The second pair indicates the railway administration that registered the vehicle. Since the breakup of the Soviet Union and several satellite nations, the assignments have changed and many new codes have been added to the list:

Code	As Reported in 1983	Presently
10	VR - Valtionrautatiet (Finland)	
12		TF - Transfesa freight car pool
14		CIWL - Compagnie Internationale des Wagons-Lits [P]
19		ENS - European Night Services (Great Britain)
20	SZD - (USSR)	RZD - Rossije Zeleznyje Dorogi (Russia)
21	ALB - (Albania)	BCZ - Bielorusse Zeleznue Dorogi (Belarus)
22		UZ - UkrZaliznyza (Ukraine)
23		CFM - Caile Ferate Moldova (Moldova)
24		LG - Lietuvos Gelezinkeliu (Lithuania)
26		LDZ - Latvijas Dzelzcelis (Latvia)
26		EVR - Eesti Vabariigi Raudtee (Estonia)
28		GR (Georgia)
34		PBr - Chemin de fer Pont-Brassus [P] (Swiss)
35		RVT - Chemin de fer Régional du Val de Travers [P] (Swiss)
36		CJ - Chemins de fer du Jura and GFM - Gruyère-Fribourg-Morat [P] (Swiss)
37		STB - Sennetalbahn [P] (Swiss)
38		EBT SMB VHB - Emmental-Burgdorf-Thun group [P] (Swiss)
41		HSH - Hekurudhe e Shqiperise (Albania)
43	GySEV - Gyor-Sopron-Ebenfurthi Vasut [P] (Hungary/Austria)	
44	BHEVV - (Hungary)	ZRS - Zeljeznice Republike Srpske (Bosnia-Herzegovina)
45		SZU Sihltal-Zürich-Üetliberg [P] (Swiss) (was GKB - Graz-Köflacher Eisenbahn [P] (Austria))
46		MThB - Mittelthurgaubahn [P] (Swiss)

<b>Code</b>	<b>As Reported in 1983</b>	<b>Presently</b>
47		SOB - Schweizerische Südostbahn [P] (Swiss)
48		BT - Bodensee-Toggenburg [P] (Swiss)
49		RhB - Rhätische Bahn [P] (Swiss)
50	DR - Deutsche Reichsbahn (East Germany)	ZBH - Zeleznica Bosnia-Herzegovina (Bosnia-Herzegovina)
51	PKP - Polskie Koleje Panstwowe (Poland)	
52	BDZ - Bulgarski Durzavni Zeleznici (Bulgaria)	
53	CFR - Caile Ferate Romane (Romania)	
54	CSD - (Czechoslovakia)	CD - Ceske Drahy (Czech Republic)
55	MAV - Magyar Allamvasutak (Hungary)	
56		ZSR - Zeleznice Slovenskej Republiky (Slovakia)
58		ARM (Armenia)
60		IE - Iarnrod Eireann (Ireland)
62	SP - Schweizerische Privatbahnen (freight pool) [P] (Swiss)	
63		BLS - Lötschbergbahn [P] (Swiss)
64	FNM - Ferrovie Nord-Milano [P] (Italy)	
65	RjB - Rjukanbahn	MZ - Macedonskih Zeleznica (Macedonia)
66	CIWL - Compagnie Internationale des Wagons-Lits [P]	TZD (Tadjikistan)
68		BE AEE - Bentheimer/Ahaus-Enscheder Eisenbahn [P] (Netherlands-Germany)
69		Eurotunnel [P] (Great Britain/France)
70	British Railways (Great Britain)	
71	RENFE - Red Nacional de los Ferrocarriles Espanoles (Spain)	
72	JZ - Zajednica Jugoslovenskih Zeleznica (Yugoslavia)	
73	OSE - Organismos Sidirodromon Ellados (Greece)	
74	SJ - Statens Järnvägar (Sweden)	
75	TCDD - Turkiye Cumhuriyeti Devlet Demiryollari Isletmesi (Turkey)	
76	NSB - Norges Statsbaner (Norway)	

<b>Code</b>	<b>As Reported in 1983</b>	<b>Presently</b>
78		HZ - Hrvatske Zeljeznice (Croatia)
79		SZ - Slovenske Zeleznice (Slovenia)
80	DB - Deutsche Bundesbahn	DBAG - Deutsche Bahn AG (Germany)
81	ÖBB - Österreichische Bundesbahnen (Austria)	
82	CFL - Societe Nationale des Chemins de Fer Luxemburgois (Luxembourg)	
83	FS - Ferrovie dello Stato (Italy)	
84	NS - Nederlandse Spoorwegen (The Netherlands)	
85	SBB CFF FFS - Schweizerische Bundesbahnen (Switzerland)	
86	DSB - Danske Statsbaner (Denmark)	
87	SNCF - Societe Nationale des Chemins de fer Francais (France)	
88	SNCB - Societe Nationale des Chemins de fer Belges (Belgium)	
94	CP - Caminhos de Ferro Portugueses (Portugal)	

### **Digits 5-6**

These two digits indicate the type of freight car as based on a number of recognized types:

<b>Number</b>	<b>Car Type</b>	<b>Car Description</b>
00-09	T	Car with opening roof
10-19	G	Closed Wagon, standard design
20-29	H	Closed Wagon, non-standard design (sliding walls etc)
30-34	K	2 axle flat car, standard design
35-39	R	Truck-equipped flat car, standard design
40-44	L	2 axle flat car, non-standard design
45-49	S	Truck-equipped flat car, non-standard design
50-55	E	Open car, standard design
56-58	T	Car with opening roof
59	E	Open car, standard design
60-69	F	Open car, non-standard design
70-79	Z	Tank car

Number	Car Type	Car Description
80-89	I	Isolated/refrigerator car
90-99	U	Other non-standard cars

### Digit 7

This single digit is usually used to denote sub-types of the above.

### Digits 8-11

These four digits contain the 'serial' number of the car (within the parameters of use, railway administration, car type, and sub-type). As one might imagine, the serial number is typically counted from 0 000 or 0 001 up to 9 999. Sometimes the 8th digit is used to identify additional sub-types.

### Digit 12

This last digit is the computer check digit, which is computed by doubling each odd-positioned digit and adding all the individual digits together. This total is subtracted from the next highest value of 10; the remainder is the check digit.

For example, using the car number, **01 83 575 0 421**:

Car Number:	0	1	8	3	5	7	5	0	4	2	1	
Multiplier:	2	1	2	1	2	1	2	1	2	1	2	
Result:	0	1	16	3	10	7	10	0	8	2	2	
Add digits	0+	1+	1+6+	3+	1+0+	7+	1+0+	0+	8+	2+	2	=32
Check-digit:												40 - 32 =8

Therefore, the complete car number is:

01 83 575 0 421-8

which will usually be arranged vertically (if space permits):

**01 RIV**  
**83 FS**  
**575 0 421-8**

and if the year is 1978, the number in its entirety describes a freight car:

- Of standard gauge (1435mm)
- In the Standard Per-diem Pool
- Registered by the Italian State Railways
- Of type 'T' (with an opening roof)
- Of sub-type 5
- With serial number 0421

Finally, the check digit '8' helps verify that the number was correctly read and recorded.

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